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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/210,545	12/14/1998	KATSUHISA OGAWA	35.C13212	5262

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EXAMINER	
GENCO, BRIAN C	

ART UNIT	PAPER NUMBER
2615	20

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/210,545	OGAWA ET AL.	
	Examiner	Art Unit	
	Brian C Genco	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 20-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 20-29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Applicant's amendment filed August 9, 2003 has been fully considered by the Examiner but is not deemed persuasive.

Upon further consideration, Examiner is withdrawing the 35 U.S.C. 112 first paragraph rejection of claims 28 and 29. Examiner notes that the interpolation circuit outputs in parallel each color signal of a pixel in a serial manner for each interpolated block. Thus the feature of providing the inputs to the signal processing circuit in parallel on a block basis is supported.

Applicant argues that Bixby does not disclose outputting, in parallel, signals of **all** the pixels in each block.

In response, Examiner notes that this limitation is not claimed. Applicant's limitation merely recites, "output lines which output, in parallel, signals of the photo-detection elements included in the block". Examiner notes that Bixby still reads on this broad claim limitation. Namely, as asserted by Applicant in the amendment filed August 9, 2003 on page 7, Bixby discloses that "all the horizontal lines of the block are selected by a block selected shift register 42 and all of the vertical lines of the block are selected sequentially by a column shift register 44 to output in **parallel** signals of the selected vertical line" (emphasis added). As such, the lines of each block are read out in parallel, wherein a line of a block is "included in the block". Further, even if Applicants broad claim limitation was interpreted to mean that all pixels in a block are output in parallel Bixby still meets the claim limitation. Bixby discloses all of the pixels in a block are output in parallel, namely each line of pixels in the block is read out in parallel. As

such the previous grounds of rejection still stand. In order to overcome the Bixby reference Applicant must claim that all of the pixels of a block are output in parallel at the same time.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by (USPN 4,322,752 to Bixby).

In regards to claim 23 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

a plurality of output lines which output, in parallel, signals of the photo-detection elements included in the block (e.g., element 45 of Fig. 4); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs an interpolation processing to interpolate a predetermined signal using signals other than the predetermined signal (e.g., Bixby discloses "the red, green and blue signals from photosite rows 1, 2, and 3 are read out simultaneously and combined," or interpolated, to give one effective line of resolution; column 6, lines 5-7).

In regards to claim 25 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

a plurality of output lines which output, in parallel, signals of the photo-detection elements included in the block (e.g., element 45 of Fig. 4); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs a compression processing (e.g., Bixby discloses "the red, green and blue signals from photosite rows 1, 2, and 3 are read out simultaneously and combined," or interpolated, to give one effective line of resolution; column 6, lines 5-7).

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 5,196,939 to Elabd et al).

In regards to claim 24 Bixby discloses an image pickup element according to claim 23, wherein said pixel area includes a plurality of partial pixel-areas (e.g., pixel blocks 1-32 shown in Fig. 4) arranged two-dimensionally in horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b), and wherein each of the plurality of partial pixel-areas include photodetectors arranged two-dimensionally in the horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b);

Bixby does not disclose nor preclude said image pickup element further comprises a memory which stores signals of a plurality of lines of the photodetectors arranged in the

horizontal direction, and a selecting circuit which reads out the signals in parallel from the memory to said plurality of output lines on a partial pixel-area basis.

Elabd discloses said image pickup element further comprising a memory which stores signals of a plurality of lines of the photodetectors arranged in the horizontal direction (e.g., element 33 of Fig. 4 wherein the storage element 33 holds a predetermined number of rows, however it would be a matter of routine skill in the art to translate the readout circuit shown in Fig. 4 so as to output pixels from lines instead of rows), and a selecting circuit which reads out the signals in parallel from said memory to said plurality of output lines on a partial pixel-area basis (e.g., the dump drain 35 drains the unselected signals in the memory and outputs the selected ones, wherein the selected lines are in a partial pixel-area basis as shown in Fig. 2B). This enables the selection of a desired block of data from within the image as shown in Fig. 2B. Therefore it would have been obvious to one skilled in the art at the time of the invention to have added Elabd's storage and selection circuits to Bixby's invention in order to enable the selection of a block of image data from within the image as shown in Fig. 2B.

In regards to claim 26 see examiners notes on the rejection of claims 24 and 25.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 6,014,467 to Asano).

In regards to claim 27 Bixby does not disclose nor preclude an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs a discrete cosine transform (DCT). Asano discloses a DCT unit, element 2 of Fig. 1, which inputs 8x8 blocks of image data to the DCT in parallel (column 4,

lines 48 – column 5, line 4). Such image processing clearly provides for more effective data storage and transmission, as is well known in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have performed DCT post-processing in order to put the image data into a standardized compressed format and to enable more efficient data storage and transmission.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 4,816,910 to Hashimoto et al).

In regards to claim 28 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

a plurality of output lines which output, in parallel, signals of the photo-detection elements included in the block (e.g., element 45 of Fig. 4).

Bixby does not disclose nor preclude an operation section which inputs, in parallel, signals originating from the signals outputted in parallel from said plurality of output lines, wherein said operation section performs edge-emphasis processing. Hashimoto et al, herein Hashimoto, discloses outputting image data in parallel from an image sensor to an edge emphasis processor, or edge enhancement means (claims 6-8 on column 11, line 51 – column 12, line 8). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have had an edge emphasis processor at the output of Bixby's image sensor in order

to perform edge enhancement with a simplified structure due to parallel inputs as disclosed by Hashimoto (column 3, lines 15-27).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 4,816,910 to Hashimoto et al) in further view of (USPN 5,771,031 to Kinoshita et al).

In regards to claim 29 see examiners notes on the rejection of claims 24, 26, and 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Thursday 7:30am to 4:30 pm and every other Friday 7:30am to 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-308-4357.

Brian C Genco
Examiner
Art Unit 2615

November 20, 2003

ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
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